Information and Status about the POSC/CAESAR Project - January 1997

"A joint industry project for creating standards for electronic data exchange and sharing"

General information:

The **POSC/CAESAR project** is a collaboration between Petrotechnical Open Software Corporation (POSC) and the CAESAR Offshore project to develop specifications for efficient electronic exchange, sharing and integration of oil and gas facility life cycle information.

Petrotechnical Open Software Corporation (POSC) is a not-for-profit, vendor neutral membership corporation founded in 1990. Major sponsors are BP Exploration, Chevron, Elf Aquitaine, Mobil, Saudi Aramco, Statoil and Texaco. It's mission is to benefit the Exploration & Production (E&P) industry by establishing, maintaining and promoting specifications to be used as standards for the sharing of information through the asset life cycle. The benefits of using international industry standards are better business decisions through sharing and collaboration and reduced cost and time.

POSC is now a 130 member organisation representing large and small vendors and suppliers of products, services and data, government agencies, universities and research centres, other standards organisations and oil companies. POSC, which has a staff of about 28, with offices in London and Houston, uses an open process to bring together the expertise available amongst the industry.

POSC has devoted the last six years collaborating with its members and other industry standards groups (PPDM, PIDD, SEG, API, SPE, etc.), computer standards groups (XOPEN, OSF, ODMG, ANSI, SQL, etc.) and other industry standards groups (STEP, CADDETC, PISTEP, EPISTLE, PLANT STEP, etc.). POSC uses existing specifications and technologies where appropriate, and invites contributions form the industry where additional ones are needed.

The POSC deliverable products, publicly available, are:

- EPICENTRE Data Model
- POSC/CAESAR Product Model, Snapshot C/D
- Application Access to Data
- Exchange of Data
- E&P User Interface
- Base Computing Standards
- Inter-Application Communications

CAESAR Offshore is a joint industry data standardisation project initiated in 1993 to reduce the life cycle cost and development time of offshore oil and gas production facilities. The initial sponsors of the project were Aker, BP, Brown & Root, Det Norske Veritas, Elf Aquitaine, Kværner, Norsk Hydro, The Research Council of Norway, Saga and Statoil. For 1997 IBM and Intergraph have also become sponsors.

The initiative was reorganised in 1994 and a collaboration agreement was entered into with POSC. The POSC/CAESAR project is funded by the CAESAR Offshore sponsors.

The POSC/CAESAR project started in late 1994 and was originally planned to finish by the end of 1996, but is now extended one year in order to complete an expanded scope of work. The POSC/CAESAR project

has 16 full-time plus part time staff coming from all the CAESAR Offshore sponsors except The Research Council. The project is located in Oslo, Norway . The project is designed to achieve:

- Useful results within two years (industry have already started implementation)
- Solutions that will meet industry requirements for data sharing as well as for exchange
- Deliverables that can be maintained by POSC as part of the POSC software integration platform specifications after the POSC/CAESAR project is complete

The project focus is on requirements for technical information used in engineering, construction and operation of upstream oil and gas facilities. Provision will also be made to include some cost, administration and planning information where it is required to support technically based life cycle activities.

Three priority areas of work have been identified:

1. Produce agreed standards for digital descriptions of facility products

2. Understand and facilitate the use of available technology for implementation of the standards

3. Encourage and assist take-up of the standards and technology by the business

The project is international in scope, and uses the POSC open process to ascertain requirements and agree on the necessary standards. The project will develop demonstration implementations based on the standards and provide support to organisations involved in take up and implementation. The main technological basis for the project are the relevant parts of ISO/STEP and POSC/Epicentre.

Project status:

The project status per today is that the initial request for comments (RFC) has been reviewed by approximately 250 companies and organisations world-wide. The industry has also responded to the request for technology (RFT) which is used as part of the basis for development of the project. The first pilot data model, "Snapshot A" was issued in December 1995 to member companies of the POSC/CAESAR Project and to other organisations who had expressed interest in the business area. The scope of Snapshot A focused on a 3-phase separator containing process, piping, mechanical and instrument information utilised in the design, engineering and maintenance life-cycle phases. The deliverables consisted of two parts containing the Product Data Model and a Reference Data Library (previously called “class library”),

Snapshot B was issued in July 1996 extending the scope of Snapshot A to include types of equipment and facilities for main process, process support, safety & facility and instrument systems. The snapshot also includes revisions and changes made as a result of the comments received about Snapshot A.

Snapshot C/D (relased January 1997) is a further extension of Snapshot B. Only minor changes has been made to the Data Model. The Reference Data Library has been greatly extended in structural and material (construction and process material) area. The other areas have gone through a further detailing and new systems have been included. Some minor adjustments have taken place in the piping area. No changes have taken place on rotating equipment.

Ultimately the requirements will become part of the POSC SIP[1] specifications for the upstream oil and gas industry.

[1] Software Integration Platform (SIP).An Open computing environment defined by POSC which enables exchange and sharing of data. The SIP is a set of specifications which consists of the Base Computer Standards (BCS), the

The purpose of Snapshot C/D is to inform about the direction of the work and to allow interested parties to comment on and contribute to the definition of requirements.

Snapshot C/D will also be the basis for the "New work item " proposal to ISO TC184/SC4. The proposal will be issued from ISO in February 1997. In addition Snapshot C/D will be the basis for the VÅV (Visund, Åsgard and Varg Development Projects) data warehouse implementation.

There is close ongoing co-operation and harmonisation with related ISO/STEP projects, especially by being an active participant in the process industry forum EPISTLE meetings and work groups. The project has recently achieved an agreement with the process industry ISO/STEP AP 221 project to have a common Reference Data Library. The POSC/CAESAR project will be the administrator of the library.

The planned activities for 1997 are further development of the standards and in addition enter into areas such as sub sea facilities, drilling, production-ships, project administration and planning, together with continued support to take-up projects within the industry. Follow-up of the New Work Item proposal in ISO will also be an important activity.

Implementation of the standards into offshore projects and NORSOK:

Due to the work previously undertaken by POSC and ISO, the completion of the POSC/CAESAR standards has come so far that implementations of the main principles can be started in real projects.

The UK offshore Eastern Through Area Project (ETAP) decided to build a data warehouse based on the POSC/CAESAR product model and the Epistle Core model concepts (ISO/STEP). The data warehouse is to hold design and engineering data for use in commissioning, operations and maintenance. The partners in the project are BP, Shell and Brown & Root and the project development consists of several platforms and sub-sea facilities. The partners expect the full benefits of the ETAP data warehouse to be a 10% saving of lifetime asset costs.

The ETAP project completed phase 1 (feasibility study) by the end of 1995. The POSC/CAESAR Project assisted in defining the data model and by participation in technical meetings. Phase 2 is developing of datawarehouse, application interfaces, tools and browsers and mapping from engineering applications. the plan is to have the datawarehouse populated by April 1997. The above co-operation is significant for the POSC/CAESAR project by being the first offshore industry take-up activity, and by taking place at a time where user experience can be fed back into the POSC/CAESAR standardisation work.

The POSC/CAESAR project has also entered into a collaboration with PIPPIN, and Esprit IV funded project, which is a joint industry project generalising the work from ETAP.

The POSC/CAESAR project are also in the process of formalising a collaboration with CIMIS (Common Industry Material Identification Standards) Project, an industry project managed by the American Petroleum Institute (API).

The Norwegian offshore projects Åsgard, Varg and Visund have agreed to implement data warehouse systems for facilities life cycle data based on POSC/CAESAR data model and Reference Data Library. The operators plan to co-operate on the development of the data warehouse systems. POSC/CAESAR will give technical assistance. A work group has been established which shall plan and budget all common activities, co-ordinate development activities for common translator, application and data warehouse software, co-operate with related projects such as ETAP in sharing experience and co-operate with POSC/CAESAR in giving

feedback to the data model/Reference Data Library and request for support. The work group are now in the process of prequalifying possible contractors that can take overall responsibility for development of the datawarehouse (System Integrator).

NORSOK has decided to establish a database built on POSC/CAESAR standards, for storage and maintenance of NORSOK piping standards. This database will include standardised identifications for commodity components, enabling designers to rapidly select vendor products for inclusion in designs and operators to establish common warehouse and logistic services for spare parts.

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